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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/506,652	09/03/2004	Fredric L Buchholz	61285A	4805

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THE DOW CHEMICAL COMPANY
INTELLECTUAL PROPERTY SECTION
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EXAMINER	
CORDRAY, DENNIS R	
ART UNIT	**PAPER NUMBER**
1731	

DATE MAILED: 04/07/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/506,652	BUCHHOLZ ET AL.	
	Examiner	Art Unit	
	Dennis Cordray	1731	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *14 March 2006*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-14* is/are pending in the application.

4a) Of the above claim(s) *1 and 10-14* is/are withdrawn from consideration.

5)☒ Claim(s) *5* is/are allowed.

6)☒ Claim(s) *2,4 and 6-9* is/are rejected.

7)☒ Claim(s) *3* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *1/11/2005*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Election/Restrictions

Applicant's election of the Invention of Group II (claims 2-9) in the reply filed on 3/14/2006 is acknowledged. Because applicant did not distinctly and specifically point out the supposed errors in the restriction requirement, the election has been treated as an election without traverse (MPEP § 818.03(a)). Claims 1 and 10-14 are withdrawn from further consideration pursuant to 37 CFR 1.142(b), as being drawn to a nonelected invention, there being no allowable generic or linking claim.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 2, 4, 6, 8, 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Roslansky et al (6371950) in view of Bewick-Sonntag et al (5762641).

Roslansky et al disclose an absorbent article comprising a mixture of hydrophilic cellulosic or synthetic polymeric fibers and a superabsorbent polymer (SAP) (Abstract; col 9, line 66 to col 10, line 9). The absorbent assembly is designed according to the amount of liquid intended to be absorbed and the absorbent capacity of the components of the assembly. The liquid capacity is the total absorbent capacity of the article or structure (col 8, line 62 to col 9, line 7). Dryness is an objective of the design (col 2, lines 17-19). SAPs inherently possess a centrifuge retention capacity, which is often

measured by a teabag retention test, and the fibers, being hydrophilic, inherently possess an absorption capacity (see Bewick-Sonntag et al, 5762641, col 7, line 66 to col 8, line 6; col 19, lines 8-14 if evidence is needed).

The absorbent article of Roslansky et al is designed to incorporate sufficient SAP to provide a total absorbent capacity of at least 280 gm of synthetic urine. To accomplish this, in one embodiment the storage layer comprises from 3 to 12 grams of SAP. If three grams of SAP will suffice to meet the design capacity, then the inventors envision adding up to 4 times the required amount, thus meeting the dryness criteria of the instant claims. A preferred embodiment incorporates 6 grams of SAP, which would correspond to a dryness quality of 0.5. The fibers incorporated into the mixture include wood fluff pulp in an amount of preferably 7-14 grams to provide the desired benefits (col 12, lines 30-44). Additional design criteria applied by Roslansky et al include a ratio of fiber to SAP from 75:25 to 25:75, with a preferred range of 65:35 to 50:50 (col 11, line 54-col 12, line 2), thus the amount of fiber material must be calculated from the determined amount of SAP.

Roslansky et al does not disclose that the SAP centrifuge retention capacity and the absorption capacity of the fibers are used or that a mass balance equation is used to achieve the design absorption capacity as well as the required fiber to SAP ratio. Roslansky et al also does not disclose that a pad maker can be used to make the absorbent structure.

Bewick-Sonntag et al discloses an absorbent structure comprising natural or synthetic fibers and a SAP (col 5, lines 44-50; col 6, lines 8-11) with one objective being

to improve dryness against a users body (col 3, lines 38-41; col 14, lines 62-63). Design of the structure to achieve preferred performance includes selecting appropriate combinations and amounts of materials in the absorbent core (col 3, lines 46-49). The total theoretical capacity of the structure is the sum of the capacities of the SAP as measured by the teabag retention test and the absorptive capacity of each of the fibrous materials (col 7, line 59 to col 8, line 7; col 19, lines 9-14). Bewick-Sonntag et al discloses a method of making the absorbent structure using a padmaker that includes the steps of placing a tissue sheet in the padmaker, adding the absorbent material onto the tissue, placing a second tissue sheet on top of the absorbent material, and finally pressing the composite together to form the pad (col 15, line 30 to col 16, line 4). Bewick-Sonntag et al also discloses that an absorbent article can be made using a top sheet and bottom sheet with an absorbent material between and attaching the materials together using both heat and pressure (col 9, lines 23-54).

The art of Rolansky et al, Bewick-Sonntag et al and the instant invention are analogous as pertaining to absorbent structures containing SAPs. It would have been obvious to one skilled in the art to use the claimed mass balance equation, centrifuge retention capacity of the SAP and the absorption capacity of the fibers to design the absorbent structure of Rolansky et al in view of Bewick-Sonntag et al as a functionally equivalent means to determine material quantities. Measuring the quantities of SAP and fibers prior to mixing would also have been obvious to obtain the desired amount of material in the mixture. It would further have been obvious to use a padmaker and

make the absorbent structure by the claimed steps as a well known and functionally equivalent option.

Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Roslansky et al in view of Bewick-Sonntag et al and further in view of Masaki et al (5821179).

Roslansky et al and Bewick-Sonntag et al do not disclose that the fibrous portion of the absorbent structure can comprise a sponge.

Masaki et al discloses an absorbent structure comprising a mixture of hydrophilic fibers and a superabsorbent polymer (SAP) (Abstract). Masaki et al also discloses that structure can include a strengthening assistant as a wet strength agent and that the strengthening assistant can be a sponge (col 10, lines 19-23 and 52-54).

The art of Roslansky et al, Bewick-Sonntag et al, Masaki et al and the instant invention are analogous as pertaining to absorbent structures containing SAPs. It would have been obvious to one skilled in the art to use a sponge in the absorbent structure of Rolansky et al in view of Bewick-Sonntag et al and further in view of Masaki et al as a wet strength agent to keep the structure stable.

Allowable Subject Matter

Claim 5 is allowed.

Claim 3 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is a statement of reasons for the indication of allowable subject matter: While the centrifuge retention capacity (CRC) is a known design parameter for absorbent structures comprising SAPs, the parameter has previously been determined by direct experimental measurement using methods such as the teabag retention test detailed in Bewick-Sonntag et al. Prior art reveals that absorbent structures have primarily been designed for a desired capacity, samples made and tested to determine if the desired capacity has been achieved, and compositions altered based on the testing to finally arrive at the desired product. Establishing a generalized correlation for calculating the CRC value, regardless of the SAP used, based on easily specified parameters of porous quality and SAP mass fraction, then calculating the amount of SAP and stranding material needed to form an absorbent structure of specified performance is a significant improvement over the prior methods.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure [Young et al (6107538), Weir et al (6300275), Weir et al (6433058)]. They pertain to other superabsorbent polymers and absorbent structures containing them.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dennis Cordray whose telephone number is 571-272-8244. The examiner can normally be reached on M - F, 7:30 -4:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Steven Griffin can be reached on 571-272-1189. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

DRC

DRC

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